

# CONSTRUCTION ENGINEERING PERCENTAGES & CONTINGENCIES

**Contingency percentages** are set up to handle unforeseen changes in a project. Changes such as additional work, quantity over-runs, and additional items are some of the contingencies that maybe expected in a project.

**Currently for all WSDOT contracts, contingencies are limited to 4% of the total contract amount.**

Please contact the Program Management office for guidance on using a Contingency percentage greater than 4%. For local agency projects administered by WSDOT off the State Highway system, no contingencies percentage will be set up.

**Engineering percentages** are the amount of monies set up in each contract for administration of the project. These percentages will vary by type of work and total dollar amount of the contract. On an average, the department has been running around 15% engineering on all projects in the improvement and preservation programs.

When beginning an estimate enter this 15% average as a beginning point for Construction Engineering. Prior to the final PS&E submittal, this percentage may be adjusted up or down using the figures in the tables included here.

The Region Program Development/Management staff can, based on appropriate justification, approve any changes in the construction engineering percentages for a project that differ from the rates listed.

Copies of the approved justification letter shall be submitted with the final PS&E turn in for advertisement.

**Please use the following tables to calculate Engineering Percentages**

*These tables are based on the historic averages for project types and are provided as a recommendation for your estimate.*

# Engineering Percentages for Highway Projects

To use the following tables :

Once the Program and sub-programs have been identified, go appropriate table and find the dollar range that covers the total Construction cost (*construction costs will include any below the line items that has Engineering applied to them, such as utility agreements and work by state forces other than WSDOT*).

Record the corresponding percentage in your estimate .

## Preservation Projects

### P1 Roadway

(PA) Paving projects.

### P2 Structures

(PB) New construction, updating existing structures projects.

(PC) Seismic retrofits.

### P3 Other Facilities

(PD) Refurbish existing rest areas to extend service life and improve safety.

(PF) Construct weigh facilities.

(PH) Major Refurbishments of electrical systems, electronics, mechanical systems and major Drainage rehabilitation or replacement projects

(PE) Slope stabilization Projects

Highway P – Preservation Program		
P1 – Roadway	P2 – Structure	P3 – Other Facility
P A - Paving / Safety Restoration	P B - Preservation	P D - Rest Area
	P C - Catastrophic Reduction	P E - Unstable Slope
		P F - Weigh Station
	P G - Program Support	
	P H - Major Drain / Electrical	

Preservation Project Percentages								
Project Cost Range	P1	P2		P3				
	PA	PA	PC	PD	PE	PF	PG	PH
\$0 - \$250,000	20%	20%	24%	18%	18%	23%	14%	21%
\$250, - \$500,000	18%	18%	24%	16%	16%	20%	12%	18%
\$500,000 - \$1,000,000	16%	16%	22%	16%	12%	18%	10%	16%
\$1,000,000 - \$2,000,000	14%	14%	20%	14%	10%	16%	10%	16%
\$2,000,000 - \$5,000,000	12%	12%	20%	14%	8%	14%	8%	14%
\$5,000,000 - \$10,000,000	10%	10%	18%	14%	6%	14%	8%	14%
\$10,000,000 +	8%	8%	18%	14%	6%	14%	8%	14%

*Highlighted percentages indicate that there were not enough projects for an accurate example*

**How to Calculate Engineering Percentage for projects with multiple Programs**

Example: **\$3,750,000** Total Construction project costs with:  
**\$2,225,000** under Preservation P1 paving (PA) and  
**\$1,525,000** under Improvement I2 collision reduction (ID)

Percentages From Tables: [ P1 ~ PA = 12% ] [ I2 ~ ID = 18% ]

$$\frac{(2,225,000 \times .12) + (1,525,000 \times .18)}{3,750,000} = 14\%$$

## Improvement Projects

### I1 Mobility — Improve mobility within congested highway corridors.

- (IA) Congestion Relief Projects Urban
- (IB) Congestion Relief Projects Rural
- (IC) Bicycle projects
- (IQ) High Occupancy Vehicle projects

### I2 Safety — Provide the safest possible highways within available resources.

- (ID) Accident reduction projects
- (IE) Projects that improve roadway geometrics, eliminate at-grade intersections, install signals / channelization at intersections

### I3 Economic Initiatives — Support efficient and reliable freight movement on state highways. Support tourism development and other Washington industries.

- (IF) Freight and Goods improvement to all weather surfaces
  - (IG) Projects providing four-lane limited access facilities on a trunk system
  - (IH) Constructing Rest areas
  - (II) Replacing or modifying structures on the Interstate System with, restricted vertical clearances and limited overload capacities
  - (IJ) Scenic Byway Projects
  - (IR) Bicycle rural road shoulder widening projects
- ### I4 Environmental Retrofit — Retrofit state highway facilities as appropriate to reduce existing environmental impacts.
- (IK) Reconstruct storm water discharge facilities
  - (IL) Projects removing fish passage barriers
  - (IM) Projects including Noise walls, berms, and noise mitigation measures.
  - (IN) Projects for air quality

Highway I – Improvement Program			
I1 - Mobility	I2 - Safety	I3 – Economic Incentive	I4 – Environmental Retrofit
IA – Urban	ID – Collision Reduction	IF - All Weather Highway	IK – Stormwater Runoff
IB – Rural	IE Collision Prevention	IG - Trunk System	IL - Fish Barrier Removal
IC – Urban iBike Connections		IH - New Safety Rest Area	IM – Noise Reduction
IQ – HOV Lane		II - Bridge Restriction	IN - Air Quality
		IJ - Scenic Highway	IO – Wetland Monitoring
I6 – Sound Transit	I7 – Tacoma Narrows	IR - Bike Touring Route	IP – Policy Implementation
IT – Regional Transit Authority	IU – Tacoma Narrows	IS - Avalanche / Flood Control	

Improvement Project Percentages												
Project Cost Range	I1				I2		I3				I4	
	IA	IB	IC	IQ	ID	IE	IF	IG	IH	IJ	IK	IL
\$0 - \$250,000	2%	18%	22%	22%	24%	22%	22%	20%	12%	12%	18%	22%
\$250, - \$500,000	23%	17%	22%	20%	22%	20%	20%	20%	12%	12%	18%	22%
\$500,000 - \$1,000,000	20%	16%	20%	20%	20%	18%	20%	18%	12%	12%	18%	22%
\$1,000,000 - \$2,000,000	17%	15%	20%	18%	18%	16%	18%	16%	12%	12%	18%	22%
\$2,000,000 - \$5,000,000	14%	14%	18%	16%	15%	14%	16%	14%	12%	12%	18%	22%
\$5,000,000 - \$10,000,000	12%	13%	16%	14%	13%	12%	14%	12%	12%	12%	18%	22%
\$10,000,000 +	10%	10%	14%	12%	10%	10%	14%	10%	12%	12%	18%	22%

*Highlighted percentages indicate that there were not enough projects for an accurate example*